COPING RESOURCES FOR STRESS AND
ASSERTIVENESS TRAINING FOR NURSES

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

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* * * * *

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ABSTRACT

Considering the pervasive and sometimes disastrous effects of stress, it is imperative that we become fully informed about these effects upon our health and well-being. Methods to identify and improve coping skills are the focus of this study. The purpose of this research was to investigate the difference in coping resources for stress of second semester nursing students receiving assertiveness training and stress management and those not receiving that intervention. The criterion variable, Coping Resources Effectiveness (CRE), was measured by the instrument Coping Resources Inventory for Stress [CRIS] (Curlette et al., 1988). Four subscales of the CRIS were also utilized: Self-Directedness, Confidence, Tension Control, and Stress Monitoring.

During the spring of 1997, 12 subjects received stress management and assertiveness training in four weekly one-hour classes. The control group of seven subjects received no training. The CRIS was administered prior to the training and in the week following the training.
One-way analyses of covariance were used to evaluate between-group differences of five measures at the post-treatment assessment, with the corresponding pretreatment score serving as the covariate (N=19). Significant treatment effects were observed for the measures of Tension Control and the CRE, or overall coping resources for stress. The posttest scores of the experimental group were significantly greater than those of the control group on those two measures. For the measure of Stress Monitoring, the treatment effects were approaching statistical significance. There were no treatment effects observed for the measures of Confidence or Self-Directedness. The students who received assertiveness training and stress management scored higher than the control group on measures of tension control and on the overall score for coping with stress.
Dedicated to my classmates at Mount Carmel School of Nursing, Class of 1964 -- some of whom were unfairly punished, but were too passive to stand up for their rights.
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CHAPTER 1
INTRODUCTION

This research investigated the relationship between assertiveness training and stress management techniques and the coping resources for stress in student nurses. With the recent research in psychoneuroimmunology, a pioneering branch of medical research, investigations of the inhibiting effects of psychological states on the functioning of the immune system are being conducted. Physical problems often have secondary emotional effects, while psychological problems often negatively affect one's physical health.

During stressful states the body experiences increases in blood sugar levels, heart rate, blood pressure, muscle tension, and hyperacidity in the gastrointestinal tract. In general, the body is preparing for an emergency. Stress has been implicated in hypertension, coronary artery disease, respiratory distress, headaches, low back pain, and other general medical conditions.

The psychological effects of stress are equally damaging. Stress produces reflexive, stereotypic thinking that precludes logical problem-solving or creative thinking in today's stressful, fast-paced lives. When under stress,
reasonable requests from others can seem like major demands on one's limited time and energy. Chronic stress can lead to anger, anxiety, and depression.

The control of stress through healthy thinking and behavior also has health implications. In contrast, the relief of stress through addictive use of consummatory substances such as tobacco, alcohol, food, or recreational drugs has disastrous health consequences. Biorhythms governing the sleeping-dreaming-waking cycle are interrupted, resulting in insomnia and disturbed sleep patterns. The combined effects of stress on physical and mental health and behavior may contribute to unsatisfactory performance, poor decisions, and failed interpersonal relationships (Curlette et al., 1988).

Stress is commonly viewed as the inequality between perceived demands and perceived resources. The body gears up for an emergency when demands are perceived to exceed resources. Unfortunately, many people not only magnify the seriousness of the demands placed on them, but they also underestimate their own resources. The result is a great deal of stress. Properly assessing one part of this equation, the perceived resources for coping with stress, will improve the prediction for being able to manage stress as it is encountered.

Lees and Ellis (1990) identified stress as the major cause of attrition in the nursing profession and found
nursing students relied on emotion-focused strategies as opposed to problem-focused ways of coping when dealing with stressful situations. The differences in coping styles were related to personality characteristics of respondents and to self-esteem, as well as to situational characteristics of the stressful episode.

A survey of 276 National League for Nursing baccalaureate programs conducted by Manderino, Ganong and Darneil (1988) found that, in most programs, stress management content was incorporated throughout the curriculum, while 10 percent of the sample indicated that a separate course in general stress management techniques was offered. Most instructional time was devoted to teaching students how to cope with interpersonal stressors. Other topics to help students learn to manage stress included communication skills, group process skills, assertion skills, and conflict management.

Poroch and McIntosh (1995) surveyed 152 nurses and found that nurses considered themselves to have moderate-to-low assertiveness skills. A statistically significant negative correlation was found between the level of assertiveness and the perception of barriers inhibiting assertive behavior. To test the hypothesis that assertion education would improve the communication skills of nursing students, McDaniel (1992) conducted a study which showed statistically significant results for the experimental group.
as compared to the control group. Those students receiving assertiveness training reported more self-confidence -- not only in their nursing practice -- but also in their personal and social lives.

Statement of the Problem

Students are admitted to nursing programs from a wide variety of backgrounds, and many do not possess the coping skills necessary for successful completion of the course of study. Feeling overwhelmed, many students are at risk of being asked to leave, or they may elect to withdraw from the nursing program. Assertiveness techniques and stress management skills may be ways of increasing coping skills of nursing students. Methods to identify and improve coping skills in nursing students were the focus of this study. The purpose of this study was to investigate the difference in coping resources for stress of first-semester nursing students receiving assertiveness and stress management training and those not receiving the training. This study was an extension of research by Mahaffey (1992), who found that students who received assertiveness training reported higher levels of stress monitoring. Individuals with higher levels of stress monitoring are better able to regulate their stress levels and cope with their stressors. Mahaffey's results also showed that students older than age 25 scored higher on stress monitoring and confidence than students 25 years of age or younger.
In order to clarify the above problem statement, the variables used in this study are defined as follows:

1. **Nursing students** were first-year second-semester baccalaureate degree enrollees at the Mount Carmel College of Nursing.

2. **Stress**, as defined by Curlette, Aycock, Matheny, Pugh and Taylor (1988), is "the inequality between perceived demands and perceived resources."

3. **Coping Resources for Stress** are the resources an individual has available which help decrease the negative effects of stress (Curlette et al., 1988). For this research "coping resources for stress" was defined as a global Coping Resources Effectiveness (CRE) score measured by the Coping Resources Inventory for Stress (Curlette et al., 1988). This instrument provides 12 primary scales and three composite scales. In addition to the global score, also examined were the students' scores on four of the primary scales: Self-Directedness; Confidence; Stress Monitoring; and Tension Control.

4. **Assertiveness** was measured by Coping Resources Inventory for Stress (CRIS) subscales of Self-Directedness and Confidence. The operational definition of self-directedness was "I'm very good at standing up for my rights," while confidence was operationalized as, "I cope with difficult situations better than most people do."
5. Stress Management was measured by the CRIS subscales of Stress Monitoring and Tension Control. Operationally, stress monitoring meant "I am good at recognizing early signs of tension build-up in my body," while tension control meant "I am able to reduce stress through relaxation techniques."

6. The mean score of approximately 20 items per scale on each of the four subscales (self-directedness, confidence, stress monitoring, and tension control) was used to measure the percent correct score.

7. Assertiveness Training, as defined by Briggs (1986), is "(about) improving personal, and therefore professional effectiveness. Assertiveness training is concerned with the building of self-confidence and esteem, and the ability to translate this into improving communications and relationships." For this study "assertiveness and stress management training" was defined as four one-hour training sessions offered once a week.

8. Traditional student was a student who was 25 years of age or younger, while a non-traditional student was older than 25 years of age.

9. Previous nursing experience was defined as having an associate degree or licensed practical nurse diploma.

Purpose

The purpose of this study was to investigate the difference in coping resources for stress of first-semester
nursing students receiving assertiveness training and stress management techniques and those not receiving such training. The goal of stress reduction in nursing students is to contribute to their successful completion of the nursing program. Curriculum planners may utilize the research findings to help meet the needs of nursing students.

Specific objectives of the study were to:

1. Determine the difference between students enrolled in the second semester of nursing receiving assertiveness training and stress management training and students not receiving training on the criterion variable of coping resources for stress.

2. Determine the difference between students receiving assertiveness training and stress management training and those not receiving training on the criterion variable of self-directedness.

3. Determine the difference between students receiving assertiveness training and stress management training and those not receiving training on the criterion variable of confidence.

4. Determine the difference between students receiving assertiveness training and stress management training and those not receiving training on the criterion variable of stress monitoring.
5. Determine the difference between students receiving assertiveness training and stress management training and those not receiving training on the criterion variable of tension control.

Conceptual Framework

This research utilized Meichenbaum's 1977 "stress-inoculation" program which uses cognitive techniques to help individuals deal with relatively mild stress stimuli in successful ways so that they gradually develop a tolerance for stronger stimuli. The training is based on the assumption that we can affect our ability to cope with stress by modifying our beliefs and self-statements about our performance in stressful situations.
CHAPTER 2
REVIEW OF THE LITERATURE

This literature review focused on several themes, but primarily stress and its effect on health are discussed. Additionally, stress on student nurses in particular, and the value of assertiveness training and stress management techniques was described. In order to understand the new field of psychoneuroimmunology (PNI), a review of the immune system and its association with stress will be presented.

There is growing evidence that both acute and chronic stressors have health-related consequences. Selye (1950) gave credibility to the concept of stress as a biochemical and psychosocial event to link environmental stimuli and disease. The new field of psychoneuroimmunology (PNI), also called psychoimmunology, is the study of the association between psychological stress, immune system functioning, and health (Hillhouse and Adler, 1991). Psychoimmunology is rapidly evolving and holds the promise of exploring many of the psychophysiological links between behavior and disease (Houldin, Lev, Prystowsky, Redeı, and Lowery, 1991).
Stress and Health

Stress is a normal part of life and can be a positive and necessary force to maintain good health and promote a sense of well-being. Coping with stress is a common topic discussed in many popular books and magazines. Lazarus and Folkman (1984) defined coping as "a process that requires constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person." Despite the possible benefits of normal stress, individuals experience and most often remember the negative effects of stress. Meichenbaum and Jaremko (1983) describe stress as a discrepancy between perceived demands and perceived responses to demands. Later, Curlette, Aycock, Matheny, Pugh and Taylor (1988) described stress in terms of a gap or inequality between perceived demands and perceived resources.

When stress is excessive, a person realizes that normal coping processes are ineffective. An individual will use either a problem-focused and/or emotion-focused process of coping when encountering problems. A person identifies a problem, generates alternative solutions, chooses a solution, and acts. These strategies diminish the pressures from the environment, barriers, and the availability of resources.
When the person realizes that nothing can be done to solve a particularly stressful situation, the emotion-focused process comes into play to soften the stressful condition. Strategies such as avoidance, minimization, distancing, selective attention, self-deception, positive comparisons, and wresting positive values from negative events alleviate the effects of stress (Lazarus and Folkman, 1984).

Models of Stress

Coping resources that are actually available to a person determine how that individual copes with the problem and which process is utilized. Four coping resources have been defined. The physical resource defines states of health and energy. The influence of positive beliefs is the psychological resource. Problem solving and social skills are considered the competent resources. Possibly the most important coping resource, social support, is identified as the social resource (Israel and Schurman, 1990).

Research studies have demonstrated the success of coping skills when applied to problems such as speech anxiety, phobias, anger, social incompetence, alcoholism, and social withdrawal in children (Meichenbaum, 1977). A particular application of a coping-skills program is teaching clients stress-management techniques by way of a strategy known as "stress inoculation." Meichenbaum, using cognitive techniques, has developed stress-inoculation
procedures that are a psychological and behavioral analogue to immunization on a biological level, gradually developing a tolerance for stronger stimuli by giving individuals opportunities to deal with relatively mild stress stimuli in successful ways. The training is based on the assumption that we can improve our ability to cope with stress by modifying our beliefs and self-statements about our performance in stressful situations.

Meichenbaum describes a stress-inoculation training program that involves the following three phases:
1) Education phase: Individuals are taught how to systematically observe the kinds of statements they make internally and how to monitor the maladaptive behaviors that flow from their inner dialogue; 2) Rehearsal phase: Individuals are given a new set of self-statements to practice which change their internal dialogue from negative and self-defeating sentences; and 3) Application phase: Individuals learn techniques to apply new skills in real-life situations. The techniques include modeling, behavior rehearsal, relaxation training, and coping-imagery training.

Meichenbaum's approach has been used with a wide range of clients, including those with problems such as obesity, schizophrenia, social isolation, and hyperactivity in children. Some of these applications include stress management, assertion training, depression treatment, anxiety-management training, and anger control in children.
In order to understand assertiveness training, a review of the literature concerning the various techniques used in the training will be necessary.

According to Bandura (1969), research conducted within the framework of social learning theory demonstrated that nearly all learning phenomena resulting from direct experience can occur on a vicarious basis through the observation of others' behavior and its consequences for them. Observation of rewarding consequences generally encourages similar performance in the observer, whereas punishing consequences have an inhibiting effect on the observer's behavior.

Bandura (1973) described three major effects of modeling: 1) new patterns of behavior may be acquired through observation; 2) inhibition of behavior previously acquired may be strengthened or weakened by observation of rewarding or punishing consequences; and 3) previously learned responses may be facilitated through the actions of others serving as "social prompts." In order for "modeling" to be effective, Bandura (1969) asserted the following subprocesses must be involved: a) the model must be attended to; b) there must be imaginal and verbal retention; c) there must be motoric reproduction (practice); and d) there must be reinforcement in order to facilitate the translation of the observational learning into overt performance. Many early modeling investigations involved children as subjects.
Lovaas (1961) found that children who had been exposed to an aggressive film engaged in more play behavior with the "hitting doll" than those who had been exposed to a non-aggressive film. Mussen and Rutherford (1961) studied the effects of aggressive cartoons on the play of first-grade school children. The results showed that exposure to aggressive fantasy in animated cartoons stimulated aggressive behavior in a play situation.

Walters and Parke (1967), in an extensive review article, interpreted the effects on subjects of positive and negative consequences to models in a cognitive framework. These investigators found that subjects learn expectations about what will be the consequence to them for engaging in certain behaviors.

Kanfer and Marston (1963) studied the effects of modeling as well as observer reinforcement. In this investigation, college students were asked to respond alternately with another subject on a verbal learning task. The co-learner in the experiment was a tape-recorded confederate whose responses were programmed. Following an appropriate response by either the subject or the model, correct responses were verbally reinforced by the experimenters according to the treatment condition. The results showed that listening to the tape of a reinforced model was sufficient to produce significant learning. The further addition of reinforcements for the subject did not
significantly enhance learning. In contrast, when the model gave the same verbal response but was not reinforced, subjects did not imitate the model's behavior.

Behavior rehearsal procedures differ from modeling by their emphasis on some kind of overt behavioral response by the subject (Friedman, 1972). The term "behavior rehearsal," as coined by Lazarus (1966), means the rehearsal of new behaviors to be used in the future. This is differentiated from "role-playing" procedures used to "act out" conflicts of the past or present, as in psychodrama (Moreno, 1964).

Wolpe (1969) maintained that behavior rehearsal serves the purpose of deconditioning anxiety. The rehearsal procedure allows the client to try out a new behavior until it becomes comfortable, without anxiety regarding its consequences. Spector (1973) found that not only does a person learn that nothing catastrophic happens as a result of assertion but that, as skills increase during practice, the individual gains self-confidence. Bandura (1969) writes that "coaching" is an important component to behavior rehearsal procedures. He maintains that there must be reinforcement of appropriate practice in order to facilitate the acquisition of new response patterns.

Since the middle 1970s corporations have become increasingly interested in ways to maintain the health of their employees. Because stress has been identified as a key risk factor in many illnesses among the working
population, corporations have offered stress management programs with the expectation of reduction in health care expenditures (Fielding, 1982). Stress management techniques that have been the most effective in reducing worksite stress and anxiety are progressive muscle relaxation techniques (Vaughn, Cheatwood, Sirles, and Brown, 1989). Another stress management technique with recent popularity is relaxation with guided imagery (RGI). RGI is a method that, through the creation of a self-selected image, allows an individual to communicate with the physiologic and psychological processes of the body occurring outside of conscious awareness (Achterberg and Lawlis, 1980). Numerous investigations support the therapeutic value of RGI for acute pain (Geden, Beck, Hauge, and Pohlman, 1984), emotional distress (Carey and Burish, 1987), depression (Leja, 1989), and chemotherapy treatment side effects (Burish and Lyles, 1981).

According to Maltz (1966), the body cannot tell the difference between the imagined experience and the "real" experience. Maltz contends that if people picture themselves performing in a certain manner, the body then interprets this as the actual performance. For example, if an individual holds an image in his or her mind (conscious or unconscious) of being unhealthy, being a failure at work, or being a successful provider, this image actually becomes a reality.
Stress on Student Nurses

Lindolp's 1989 study of stress and its relationship to withdrawal from nursing school listed lack of a support system, nursing staff attitudes, self-generated stress, and ineffective ways of coping as reasons for leaving the program. Other researchers agree that student-staff conflicts are problematic. Nursing students view their role as learners who seek feedback, while staff members consider the students as being there to help get a job done (Fitzsimmons, 1989).

Similarly, Slater (1990) writes that there is often a conflict between traditional roles and current demands. The student nurse must communicate with many members of the health-care team and is apt to encounter problems in communication. Decisions which affect the life or death of the patient may have to be made and acted upon quickly, and this requires a problem-focused decision-making process.

Improved communication/collaboration among students was also suggested by Phillips (1988) as a means to decrease anxiety and increase learning. Factors that decrease anxiety, according to the students in Phillips' study, included increased confidence in their own ability, a more relaxed teaching and learning atmosphere, everyone working together, and being treated as adults. In agreement with Phillips is Haack (1988), who suggests that, since nursing students are at risk for stress-related disorders, they
would benefit from activities that support interaction with peers and faculty. In a study comparing 50 nursing students to 50 social work students, Davis (1969) found that nursing students were rated as dependable, conscientious, methodical, and tending to be submissive and sustain a subordinate role. In contrast, the social work students were rated as independent, spontaneous, and assertive. Numerof (1980) found similar results and agrees that nursing education reinforces the socialized behaviors of being dependent and passive.

According to McManus (1990), student nurses experience stress due to academic pressure, workload, communication difficulties, clinical preparation, the severity of clients' illnesses, inadequate social support, and interpersonal relationships. In her 1974 investigation of non-traditional students, Cross suggests that nursing education be directed toward skills needed for attaining specific knowledge and interpersonal skills, which would result in improved coping skills. Nielsen (1991) recognizes the following as barriers to learning for adult students: being a displaced homemaker or single parent, financial problems, having child care and/or transportation needs. Gerry (1989) reported that older nurses scored higher in assertiveness than younger nurses, regardless of the length of their employment. The nurses in positions of authority scored the highest, while nurses with the least authority were less assertive at work than at
home. Gerry not only believes that assertive behavior can help in the reduction of stress, but also that nurses should be taught assertiveness early so that this behavior can be practiced. This opinion is shared by Palmer and Deck (1981) who taught assertiveness to senior nursing students, and by Jones (1989), who studied nurses' perceptions of the nursing shortage. Lees and Ellis (1990) conducted a comprehensive study of stressors and coping strategies in nurses and concluded that nurses who stayed in nursing had higher self-esteem, lower anxiety, and used problem-focused coping strategies more than nurses who left the profession. On this basis they designed a stress-management program for student nurses that included discussion groups, assertiveness, and progressive relaxation training. This program reduced student attrition by assisting students to develop peer support, problem-focused coping, and strategies for relaxation.

In an assessment of coping strategies among first-year nursing students, Parkes (1986) reported links between work demands, work's perceived importance and stressfulness, and type of coping response; also found were relationships between extraversion, use of social support, and coping responses. Recent assessments of burnout in nursing would include a strong overlap with depression in the burnout equation. Packard and Motowidlo (1987) provide some support for this possibility in their finding that job satisfaction
is unrelated to job performance, but is based on depression, which in turn is mediated by stress and personal characteristics.

Psychoneuroimmunology

While the idea that one's psychological state influences one's health is not new, there is growing evidence that both chronic and everyday stressors may have health-related consequences. Psychoneuroimmunology (PNI) is the study of the association between psychological stress, immune system functioning, and health. Since Ader and Cohen (1975) discovered it was possible to classically condition immune system functioning using a taste-aversion paradigm, the scientific exploration of PNI has continued to grow. This body of knowledge is especially relevant to nursing practice because it reinforces nursing's perspective of holistic man.

Endorphins, a generic name for endogenous morphins, are substances in the brain that are best known for their role in analgesia (Goldberg, 1988). Pain perception is the clearest function of endorphins and has been the subject of much research. Fischer's 1988 review of 700 publications resulted in the conclusion that opioid peptides modulate immune function. To summarize, the results of these studies indicate that the endocrine system is highly responsive to both life experiences and psychological states and has a
significant, although complicated, effect on immune processes (Schleifer, Keller, Bond, Cohen and Stein, 1989).

Next discussed are studies which link the stress associated with social support, depression, and bereavement to immune function. Kiecolt-Glaser, Fisher, Ogrocki, Stout, Speicher and Glaser (1987) studied 38 separated or divorced women and, using a variety of psychological measures and immunological assays, matched them with a comparison group of married women. The results indicated that significant differences in several immune measures were present in the separated or divorced group. The women who had been separated within a year of testing showed the most pronounced differences. There were significantly lower percentages of T-helper lymphocytes and NK (natural killer) cells. The separated or divorced women who had been more attached to their spouses experienced higher levels of distress and loneliness. Although the researchers found statistically significant differences in immunological measures, the separated or divorced women did not differ from married women in the number of sick days or frequency of doctor visits (Kiecolt-Glaser et al.).

In a later study of marital discord and immunity in males, Kiecolt-Glaser, Kennedy, Malkoff, Fisher, Speicher, and Glaser (1988) examined psychoimmunological differences between 32 separated or divorced men and matched controls. The separated or divorced men reported a greater number of
sick days than the married group. Among men separated within the previous year, husbands who initiated the breakup had significantly lower antibody levels to latent Epstein-Barr virus and reported a much lower average of days ill from infectious disease than did husbands whose wives had initiated the separation. Interestingly this pattern was reversed among subjects who had been separated for more than a year, with initiators reporting more sick days than non-initiators (Kiecolt-Glaser et al.).

Whether social support was related to immune function among spouses of cancer patients was investigated by Baron, Cutrona, Russell, Hicklin & Lubardoff (1990). The effects of depression and negative life events were examined as potential mediators between the stress and suppressed immunity. The results demonstrated greater immunocompetence as evidenced by natural killer (NK) cytotoxicity among spouses who reported high levels of social support, while no evidence was found for mediation by either life events or depression (Baron, et al.). Other psychoneuroimmunological studies by Kiecolt-Glaser and colleagues has shown that social support may mitigate the harmful effects of stressful life events. They found a significant association between loneliness and cellular immunocompetency in a sample of psychiatric inpatients (Kiecolt-Glaser, Ricker, Messick, Speicher, Garner, and Glaser 1984). They also found, in a sample of college students, that stressful life events and
loneliness were associated with a decline in NK cell activity (Kiecolt-Glaser, Garner, Speicher, Penn, Holliday, and Glaser, 1984).

More evidence that social support has a direct effect on enhancing health outcomes regardless of whether the individual is exposed to stressful experiences has been found by Jemmott, Borysenko and Borysenko (1983), who investigated the relationship of academic stress and social support to salivary concentrations of S-IgA in healthy undergraduate students. The students who reported more adequate social support in the pre-examination period had significantly higher S-IgA levels than did their peers. Immunoglobulin A(IgA) is found in seromucous secretions such as saliva, tears, sweat, and fluids of the respiratory, genitourinary, and gastrointestinal tracts. Its function is to defend the exposed external body surfaces from infections. IgA antibodies inhibit the adherence of coated microorganisms to the surface of mucosal cells (Roitt, 1988).

Stone, Valdimarsdotter, Jandorf, Cox, and Neale (1987) studied salivary IgA secretions and made note of moods daily over a number of weeks. Generally, they found higher concentrations of IgA on days when the subjects perceived themselves to be in a positive mood. On the other hand, salivary IgA concentrations were lower on days when the subjects perceived themselves in a negative mood. This
study suggested that salivary IgA may be influenced by daily events or daily mood changes.

These studies suggest that social support can mediate the stress and immune response relationship. However, the studies employed different psychosocial and immunological measures, which must be taken into consideration. Clearly, future research is needed to replicate these studies and clarify the relationship.

Calabrese, Kling, and Gold (1987) report there is clear evidence that conjugal bereavement can compromise specific components of the immune system. Since Barrtrop, Lockhurst, Lazarus, Kiloh, and Penny (1977) first investigated diminished lymphocyte stimulation and bereavement, there have been a number of studies to replicate their findings. Initial research found significantly depressed lymphocyte stimulation in spouses eight weeks after bereavement. Schleifer, Keller, Camerino, Thornton, and Stein (1983) also found depressed lymphocyte stimulation in widowers in the two months following the death of the spouse as compared with lymphocyte stimulation preceding bereavement. The researchers' conclusion is that suppressed immunity following the death of a spouse may be related to the increased morbidity and mortality associated with bereavement.

The effect of stress-induced release of endogenous opiates on NK cell activity has been studied in humans and
animals. Mandler, Biddison, Mandler, and Serviote (1986) studied beta endorphins in humans and found enhanced NK cell cytolytic activity. In animals, opioid forms of stress decreased NK activity relative to the perceived controllability of the stressor. In uncontrollable stress, such as in intermittent footshock, a nonopioid stress occurred that did not suppress NK activity (Shavit, Lewis, Terman, Gale, and Liebeskind (1984). This may support Selye's theory of "good" stress (eustress) and "bad" stress (distress) (Selye, 1982). The "good" stress of a controllable physical challenge such as exercise or competition, may increase endorphin levels and be immunoenhancing. However, overwhelming uncontrollable "bad" stress, such as care of a terminally ill spouse, may raise endorphin levels too high and depress NK activity (Birney, 1991).

Findings have suggested that social support is an influential variable in perceived job stress and may act as a buffering factor in stressful work environments (Milazzo, 1988). Perceived social support satisfaction tends to be more strongly and consistently related to psychological, rather than physical, adjustment (Fiore, Coppel, Becker, and Cox, 1986). The concept of social support and its appropriate measurement remains complex. Allanback (1988) recommends that future studies examine the relationship of
perceived, as well as actually received, social support in concert with situational and personal factors.

Although psychoneuroimmunology is still evolving, definite mind-body effects have been demonstrated, including the direct influence of the psychological state on immunity through neuroendocrine channels. It is essential to assess coping strategies, social support, perceived controllability, loneliness, and depression. Our increased knowledge of the immune system and the human response to stress include the importance of effective stress management techniques and support of healthy coping mechanisms.

Research by Pert (1987) provides clarification and evidence regarding the relationship among psychosocial factors and interaction between the central nervous system and the immune system. Specifically, it has become more evident how stress is immunosuppressive, and how social support and coping are immunoenhancing. According to Pert the emotion-affecting neuropeptides (hormone-like chemicals released by nerve cells) control the migration of human monocytes in healing and disease. The limbic system, a group of subcortical structures of the brain (the hypothalamus, the hippocampus, and the amygdala) that are concerned especially with emotion and motivation, have 40 times more neuropeptide receptors than other parts of the brain (Van Nguyen, 1991). The presence of neuropeptide receptors on immune cells suggests an interactive network of
information flow between the brain and the immune system. Increasing supportive evidence indicates that neuropeptides may be involved in biochemical mediation of emotion, and that they may serve to facilitate communication between the brain and immune system.

Stress Management

This close connection of the brain to the immune system would suggest that awareness of emotions and cognitive control, as well as emotional stability and personality characteristics, may have direct immunological consequences on health (Stone et al., 1987). In a 1991 pilot study, Seligman treated 40 patients diagnosed with colon cancer and melanoma by using cognitive therapy to arm patients with new ways of thinking about stress. While patients continued their chemotherapy and radiation treatment, cognitive therapy was supplemented with relaxation training for coping with stress. The control group of cancer patients, while receiving the same medical treatments, did not receive cognitive therapy or relaxation training. At the completion of the study, cognitive therapy was found to have sharply increased the level of NK cell activity of the patients in the experimental group, while there was no increase in the control group (Seligman). "Hardiness," a constellation of personality traits and coping skills reflecting commitment, control, and challenge, is correlated with health by Kobasa, Maddi, and Kahn (1982). Kobasa and colleagues developed
"hardiness induction groups," small group sessions in which members are taught to focus their sense of control over stress. Kobasa found that, at the completion of hardiness training, the members reported fewer symptoms of psychological distress, and had lower blood pressure and increased NK cell activity (Kobasa et al., 1982).

As an adjunct faculty member of the school of medicine at UCLA in 1989, Cousins was given the opportunity to design and implement a research program with the collaboration of a team of physicians and psychoneuroimmunologists. After experiencing a serious autoimmune disease, Cousins pondered the steps he had taken to try to regain health, in particular his adoption of a hopeful attitude and an active role. What had been effective? He was able to report research findings indicating that hope, faith, love, will to live, purpose, laughter, and festivity can help combat serious disease and that positive attitudes are biological-chemical realities, not merely "moods" (Cousins).

Relaxation interventions, guided imagery, self-hypnosis, and biofeedback have been used successfully to combat stress. Green and Green (1987) found that relaxation techniques significantly increased one component of the immune response (S-IgA) in a population of college students after only 20 minutes of practice. Jasnoski and Kugler (1987) found that after a one-hour relaxation and imagery intervention for a sample of college students, higher S-IgA
levels were present. Relaxation training was also used in a geriatric population by Kiecolt-Glaser, Glaser, and Williger (1985). The subjects assigned to the relaxation training group, as compared to a social control group and a control group, had significantly higher NK cell activity, significant decrease in antibody titers to the herpes simplex virus, and a decrease in self-rated distress at the end of the intervention (Kiecolt-Glaser, et al.).

A growing number of studies demonstrates a relationship among stressful life events, psychological interventions, and the immune system. However, the mechanisms by which the interventions exert their effects have not been determined. There is a wide range of methods to assess immune functioning; some are more exact than others. Future applications of behavioral and psychotherapeutic interventions must focus on more precise pairing of variables to enhance the clinical outcome. Controlled longitudinal studies, including accurate assessment of the occurrence of illness, are needed to determine the associations among psychosocial events, immunity, and health.

The proposed research will provide information about recognizing stress and coping with stress. The CRIS is designed to measure coping resources, which are believed to help lessen the negative effects of stress. These resources consist of personal behaviors, attitudes and beliefs, in
addition to the person's physical being and financial resources. The Confidence scale measures faith in one's ability to cope successfully with stressful life situations. The Self-Directedness scale measures the degree to which one respects his/her judgment and wisdom as a guide to behavior. Stress Monitoring measures one's awareness of personal stress and tension build-up, while Tension Control measures the ability one feels he/she has to control the level of tension experienced. The introduction of assertiveness/stress management training hopefully will provide effective strategies for preventing and/or combating stress. The purpose of this study is to investigate the difference in coping resources for stress of first-semester nursing students receiving assertiveness training and stress management techniques and those not receiving such training.

Justification For Study

This research was based on the findings of Mahaffey (1992), who found that students who received assertiveness training scored higher on stress monitoring than those who received no training. Results also showed that non-traditional nursing students scored higher on stress monitoring and confidence than traditional students.

The training by Mahaffey was offered prior to the beginning of the semester, while the current training was offered after successful completion of the first semester. The population for Mahaffey's research was 75 percent non-
traditional and 25 percent traditional age group, while the population for this research is reversed: 75 percent traditional and 25 percent non-traditional.

Although this study was not a replication of Mahaffey's research, it served as an extension of her findings. The strength of the current research lies in the addition of stress-management techniques to assertiveness training. While much current research focuses on assertiveness training, there is a need to investigate stress monitoring and tension control as coping resources for stress. It is imperative that stress be understood because of the pervasive and sometimes disastrous effects of stress. Effective strategies for preventing and combating stress will contribute to improved work performance, more satisfying personal relationships, and better general health.

Research by Lees and Ellis (1990) identified stress as the major cause of attrition in the nursing profession and found that the differences in coping styles were related to personality characteristics such as self-esteem. The 152 nurses surveyed by Poroch and McIntosh (1995) considered themselves to have moderate-to-low assertiveness skills and perceived barriers that inhibited their assertive behavior. McDaniel's (1992) study showed statistically significant results for those in the experimental group receiving assertiveness training, who reported more self-confidence than the control group.
CHAPTER 3

METHODS

Purpose Of Study

The purpose of this study was to investigate the difference in coping resources for stress in first-semester nursing students receiving assertiveness training and stress management techniques and those not receiving such training. Understanding stress is important because psychological problems often negatively affect one's physical health. Recent medical research, called psychoneuroimmunology, investigates the inhibiting effects of psychological states on the functioning of the immune system.

First it is important to understand the difference between "good" stress, called eustress, and "bad" stress, called distress, which exacts a much costlier toll on the body (Selye, 1982). This research refers to distress, which can be a killer, as opposed to eustress, which acts as a tonic to "spice up" life. Interestingly, the two kinds of stress involve the same kinds of physiological changes.
The main questions considered in this research project were:

1. To what extent does assertiveness training increase an individual's resources for coping with stress?
2. To what extent does the use of stress management techniques increase an individual's resources for coping with stress?

Research questions guiding the study were:

1. Does a statistical difference exist between second-semester nursing students receiving assertiveness training and second-semester nursing students not receiving training on the criterion variable of coping resources for stress as measured by the CRIS (Coping Resources Inventory for Stress, Curlette, 1988)?

2. Does a statistical difference exist between second-semester nursing students receiving assertiveness training and stress management training and second-semester nursing students not receiving training on the criterion variable of self-directedness as measured by the CRIS?

3. Does a statistical difference exist between second-semester students receiving assertiveness training and stress management training and second-semester nursing students not receiving training on the
criterion variable of confidence as measured by the CRIS?

4. Does a statistical difference exist between second-semester nursing students receiving assertiveness training and stress management training and second-semester nursing students not receiving training on the criterion variable of stress monitoring as measured by the CRIS?

5. Does a statistical difference exist between second-semester nursing students receiving assertiveness training and stress management training and second-semester nursing students not receiving training on the criterion variable of tension control as measured by the CRIS?

Limitations of the Study

The results of this study were subject to the following limitations:

1. All data relative to the variables of coping resources for stress must be considered in the context of the instrument used, the CRIS and the population used.

2. The subjects in this study were limited to students enrolled in the second semester of the first year at a baccalaureate degree nursing college. The subjects were Caucasian female nursing students 18 to 44 years of age. Generalizations to nursing students outside these parameters should be made with caution.
3. The timeframe for the experimental procedure was limited to four weeks approaching the end of the second semester. Students were concerned about studying for finals and admitted that allowing time for the study was problematic for them. A longitudinal study might have yielded different results.

4. The sessions for assertiveness training and stress management training were limited to one-hour sessions once a week for four weeks. Since the practice component of assertiveness is a personal skill, the reinforcement of behavior over a longer period of time would likely have reflected different results.

5. The intervention was reduced from six weeks to four weeks due to the approaching end of the semester.

Research Design

This study used a pretest and posttest control group design for non-equivalent group comparison, which is Campbell and Stanley's #10 Design (Campbell & Stanley, 1963). The groups constituted naturally assembled collectives which were as similar as availability permitted, yet not so similar as to allow for dispensing with the pretest.

The non-equivalent control group design controls for internal validity threats to maturation, testing, instrumentation, selection, and mortality "in that the difference for the experimental group between pretest and
posttest cannot be explained by these variables because they would affect both the experimental and the comparison group" (Campbell & Stanley, 1963).

Population

The target population for this study was freshman baccalaureate degree nursing students. In Mahaffey's 1992 research, the investigation utilized associate degree students who had not yet started their first semester. For this research, the accessible population consisted of those student nurses enrolled in the freshman class at Mount Carmel College of Nursing who were available for stress management and assertiveness training at a time when the researcher was available to provide the testing and training. Mount Carmel College of Nursing is a hospital-based nursing college in Columbus, Ohio which offers a baccalaureate degree following successful completion of a four-year program.

Selection

Second-semester freshman baccalaureate degree nursing students who were accessible for training sessions became the convenience sample. Fewer class members, also freshman nursing students, comprised the control group. The experimental group received four hours of assertiveness and stress management training, while the control group received no training. The CRIS was administered to both groups of
students at the beginning and at the completion of the training.

The students attended Mount Carmel College of Nursing and had successfully completed the first semester of a baccalaureate degree program in nursing education. Of the 95 students enrolled in the 1996-1997 Freshman Class, 36 were accessible for the training. There was considerable difficulty arranging time and space for testing and assertiveness training for those students living off-campus, attending classes at an affiliate university, and/or working part-time in the community. Invitations to participate in the research were mailed to all freshman students in mid-December, along with their first semester grades. (See Appendix A.) At the beginning of the second semester an oral presentation was made to approximately 60 students. (See Appendix A.) This assembly of students comprised the largest number of students who would be gathered at any one time for a given class. There was no scheduled class or time at which all freshman students could be present.

Notices were placed in all freshman mailboxes (See Appendix A), and sign-up sheets were placed on bulletin boards outside nursing classrooms and at the front desk in the nursing dormitory. Interest in the research was obvious, but the logistics posed problems. Fewer than 20 freshman students lived in the college dormitory, and capturing students when classroom space was available was a

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challenge. The assertiveness training and stress management sessions were offered one morning, one afternoon, and one evening weekly in order to provide the training to as many students as possible.

The CRIS was administered the first and sixth weeks of the program. Assertiveness training and stress management techniques were offered one hour weekly in each of the four weeks between testing.

Data Collection

Written permission for the research was obtained from the Human Subjects Review Board of The Ohio State University and from the Mount Carmel Health Institutional Review Board. (See Appendix B.) Students volunteering to participate in the research were requested to sign Informed Consent forms (See Appendix C) which assured them of the confidentiality of the study and of their right to withdraw from the study at any time without penalty.

During the second semester, students in the experimental group attended one-hour sessions of assertiveness training and stress management training weekly for four weeks. Content included lectures, individual activities and group activities. The training program was adapted from a series of articles by Bond (1988). The four major topics were "What Is Assertiveness?," "Should I Be Assertive?," "Body Language," and "Putting Assertiveness Into Practice." (See Appendix D.) The training program
developed by Bond was specifically designed for nurses as a guide for self-awareness and management of stress. The stress management component included deep breathing, cervical exercises, correct cognitions, and positive imagery (See Appendix E.) The control group received no assertiveness training or stress management training.

Instrumentation

"The Coping Resources Inventory For Stress" (CRIS) is a 280-item self-report instrument which requires a true or false response. The inventory represents 10 years of research and seven revisions. CRIS yields 37 scores: an overall Coping Resources Effectiveness (CRE) score, 12 Primary scales, three Composite scales, 16 Wellness Inhibiting items indicating serious health problems, and five validity keys.

The 280 items that appear in the CRIS represent data on 700-plus items obtained from more than 3,500 subjects which were analyzed through disparate group studies, factor analyses, item analysis, item bias studies and reliability coefficients. The normative sample (n = 1,199) is weighted by race, gender, and income so as to be representative of the United States population at large in terms of race, gender, and age.

CRIS scales reflect the results of extensive literature reviews, two meta-analyses of the effectiveness of coping resources, and seven factor analyses of the items. These
scales have relatively high internal consistency reliabilities (.84 to .97; Mdn = .88; n = 814) and test-retest reliabilities (.76 to .95 over a four-week period; M = .86; Mdn = .87; n = 34 college students) and moderate-to-low intercorrelations (range .05 to .62, M = .35, Mdn = .33). These features allow it to be used as an inventory that offers stable measures of subconstructs, all of which contribute to one superordinate construct, coping resources. The relatively high coefficient alpha reliabilities and large number of items for the scales (20 or more) lead to smaller errors of measurement and, therefore, differences between scales for the same individual can be used more appropriately for clinical interventions. Evidence of the modifiability of each of the CRIS scales adds further to its clinical usefulness (Curlette et al., 1988). Alpha coefficients for the subscales on the CRIS were unable to be computed because the publishers would not release the scoring templates, nor would they compute them for my study.

Permission had been obtained from Mount Carmel College of Nursing for use of the "Coping Resources Inventory For Stress" (Curlette et al., 1988). This instrument requires approximately 60 minutes to administer. Demographic data collected on the answer sheet include age and gender. Previous nursing experience and race were obtained from each student's application to the college.
Items were originally constructed from a taxonomy of coping resources identified through an exhaustive literature search. All scales were factor analytically derived.

The overall CRE score and four of the subscales were used in the scoring. The four subscales were: Scale #2, Self-Directedness; Scale #3, Confidence; Scale #9, Stress Monitoring; and Scale #10, Tension Control. Self-Directedness and Confidence scores represent assertiveness, while Stress Monitoring and Tension Control scores represent the ability to recognize and control stress. The remaining scales would provide data useful to the college for understanding the rate of attrition, but would not be analyzed as data for this research.

Intervention

The purpose of this study was to provide training in assertiveness and stress management one hour weekly for four weeks. Pretesting and posttesting were conducted the week previous to and the week following the training.

At the beginning of the first training session (Week #2), each student was asked to choose someone in the group that she did not know well. The pairs then spent five minutes getting to know each other and learning answers to questions which would enable them to introduce each other to the remaining class members. Questions recommended were "Why did you choose nursing?," "Where were you born?," "Who named you?," and "What is important or unique about you that
you would like to share with the class?" This exercise encouraged familiarity and group support, and provided an opportunity to speak publicly. This could take one hour, depending on the number of students in the group. Beginning with the first session, the students were asked to sit in a circle in an attempt to improve communication and comfort levels. Additionally, the students were encouraged to sit next to students unfamiliar to them. The sessions were begun by students giving their first names in turn. Structured scripts regarding refusing requests, making requests, and asking others for a change in their behavior were provided at each session. (See Appendix D.) However, the students preferred using personal dilemmas for discussion and role-playing. Common themes were interpersonal relationships with families or significant others.

After initial introductions, the students were invited to share any personal concerns that they felt would be appropriate to represent the topic for that week. For example, refusing requests was practiced relative to a personal dating situation and professionally in responding to a physician's request. The role-playing began after a scenario had been chosen. The groups were composed of three persons: one who was modeling assertive behavior, one who acted the part of family member or physician, and one who acted as the coach. According to Bandura (1969), "coaching"
and the practice component are essential in the learning process.

At the end of each session, deep breathing and cervical spine exercises were taught. Handouts explaining deep breathing and cervical spine exercises were provided so that students could practice these throughout the research project. (See Appendix E.) Initially, teaching the cervical spine exercises and deep breathing required ten minutes. At subsequent sessions the combined cervical spine exercises and deep breathing required only five minutes, which allowed more time for assertiveness training and role-playing.

At the first session handouts on correct cognitions and positive imagery were distributed and discussed. (See Appendix E.) The correct cognitions were taught in an attempt to challenge the students' negative self-talk and improve their communication styles. Positive imagery was taught to encourage relaxation and tension control. According to Maltz (1966), if people picture themselves in a certain manner, the body then interprets this as the actual performance. Meichenbaum (1977) also recommended "stress inoculation" techniques which included modeling, behavioral rehearsal, relaxation training, and coping-imagery training.

At session two, refusing requests was taught and role-played. (See Appendix D.) At session three, making requests was taught and role-played. (See Appendix D.) At session four, asking others for change in their behavior was taught
and role-played. (See Appendix D.) Additionally, each student was provided hand-outs on Ideas To Keep In Mind referring to each training category. (See Appendix D.) The posttest was administered at the sixth week of the program. The sessions on refusing requests, making requests, and asking others for a change in behavior were developed by Bond (1988) and utilized by Mahaffey (1992).

Analysis of Data

The data were analyzed descriptively and statistically. The means and standard deviations of the pretest percent correct scores of the experimental and control groups were compared to the normative group scores on each of the predictor variables. The statistical analysis was conducted using a one-way analysis of covariance. The intervention was a single-classification criterion. According to Campbell and Stanley (1963), the analysis of covariance with pretest scores as the covariate is usually preferable to simple gain-score comparisons.

The primary hypothesis was that there would be a statistically significant difference between experimental and control groups on the level of coping resources for stress. Four additional hypotheses were that there would be statistically significant differences between the experimental and control groups on the subscales Tension Control, Stress Monitoring, Self-Directedness, and Confidence, all using the Coping Resources Inventory For Stress (Curlette, 1988).
CHAPTER 4
ANALYSIS OF DATA

The examination of the data obtained through this research has been organized into three sections. The descriptive analysis of the data is followed by a comparison of means with normative data and concluded with an explanation of the statistical testing of the research hypotheses. Specific objective of the study were to:

1. Determine the difference between students enrolled in the second semester of nursing receiving assertiveness training and stress management training and students not receiving training on the criterion variable of coping resources for stress.

2. Determine the difference between students receiving assertiveness training and stress management training and those not receiving training on the criterion variable of self-directedness.

3. Determine the difference between students receiving assertiveness training and stress management training and those not receiving training on the criterion variable of confidence.
4. Determine the difference between students receiving assertiveness training and stress management training and those not receiving training on the criterion variable of stress monitoring.

5. Determine the difference between students receiving assertiveness training and stress management training and those not receiving training on the criterion variable of tension control.

Descriptive Analysis of Data

The experimental sample in this study consisted of 12 second-semester, first-year baccalaureate degree nursing students. The students were all Caucasian females with no previous nursing experience. Ages ranged from 18-44 years, with a mean age of 23 years. Three students were non-traditional students, of an age greater than 25 years.

The control group was represented by seven first-year, second-semester baccalaureate degree nursing students. The subjects were all Caucasian females of ages ranging from 19 to 24 years. No one in the control group had prior nursing experience.

Comparison of Means with Normative Data

The means and standard deviations of the pretest percent correct scores of the experimental and control groups were compared to the normative group on each of the predictor variables. The normative data provided from the Coping Resources For Stress Manual (Curlette et al., 1988)
were computed with a representative sample of the United States population weighted for sex, age, and race. The sample (n=814) was derived from profiles of 1,897 persons completing the CRIS. The t-test which was used considers the unequal variance produced by the unequal numbers of subjects in the groups being compared. Table 1 is a comparison of means and standard deviations of the research sample and normative group with computed t-test scores. The t-critical is 1.96 at the .05 significance level based on a 2-tail test. Self-Directedness was the only subscale in which the t-test for the predictor variable was not statistically significant when comparing the research sample to the normative group. The mean score of the normative group was not significantly higher than the mean score of the research sample. The normative group and the research sample were similar on the subscale of Self-Directedness which measures the degree to which one respects his/her judgment and wisdom as a guide to behavior. High scorers are willing to think and behave somewhat independently of the opinions and wishes of others.

On the three remaining subscales, Confidence, Tension Control, and Stress Monitoring, and on the primary scale, Coping Resources Effectiveness, the normative group scored sufficiently higher than the research sample to achieve statistical significance. The t-tests for the predictor variables of Confidence, Tension Control, Stress Monitoring,
<table>
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<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
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<td>Coping Resources</td>
<td>53.16 14.72</td>
<td>65.99 15.85</td>
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</tbody>
</table>

df=831  t critical = 1.96 at the .05 significance level

Table 1: Comparison of Research Sample to Normative Group Using Pretest Percent Correct Scores
and Coping Resources Effectiveness were statistically significant when comparing the normative group to the research sample. The mean scores of the normative group represented more confidence, better ability to measure awareness of personal stress and tension build-up, and increased ability to regulate and cope with stress than the mean scores of the research sample.

Table 2 is a comparison of means and standard deviations of the experimental group and normative group with computed t-test scores. As in Table 1, the t-test for the predictor variable of Self-Directedness was not statistically significant when comparing the experimental group to the normative group. The mean score of the normative group was not significantly higher than the mean score of the experimental group. The two groups did not differ significantly in their ability to think and behave somewhat independently of the opinions and wishes of others. Unlike Table 1, however, the t-test for the predictor variable of Stress Monitoring failed to achieve statistical significance when comparing the experimental group to the normative group. The mean score of the normative group was not significantly higher than the mean score of the experimental group. The two groups did not differ significantly in their ability to monitor personal stress and tension build-up. Table 2 represents that statistical significance was achieved when comparing the normative group
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<td>Coping Resources</td>
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<td>15.80</td>
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df = 824          

$t$ critical = 1.96 at the .05 significance level

Table 2: Comparison of Experimental Group to Normative Group Using Pretest Percent Correct Scores
to the experimental group on the predictor variables of Confidence, Tension Control, and Coping Resources Effectiveness. The mean scores of the normative group were significantly higher than the mean scores of the experimental group. The normative group scores represented more confidence, better ability to control tension, and increased ability to effectively cope with stress when compared to the experimental group.

Table 3 is a comparison of means and standard deviations of the control group and the normative group with computed t-test scores. As in Tables 1 and 2, the t-test for the predictor variables of Self-Directedness was not statistically significant when comparing the control group to the normative group. The mean score of the normative group was not significantly higher than the mean score of the control group. The two groups did not differ significantly in their ability to think and behave somewhat independently of the wishes and opinions of others.

Table 3 also illustrates that the difference in the mean scores of the control group and normative group failed to achieve statistical significance on the subscale of tension control. The groups did not differ significantly in their ability to lower arousal through relaxation procedures and thought control. However, statistical significance was achieved when comparing the mean scores of the control group and the normative group on the subscales of Confidence,
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</tr>
<tr>
<td></td>
<td>Mean Standard</td>
<td>Mean Standard</td>
</tr>
<tr>
<td>Self - Directedness</td>
<td>45.00 34.88</td>
<td>57.30 25.85</td>
</tr>
<tr>
<td>Confidence</td>
<td>35.00 20.00</td>
<td>67.20 27.40</td>
</tr>
<tr>
<td>Tension Control</td>
<td>43.57 21.93</td>
<td>56.15 26.00</td>
</tr>
<tr>
<td>Stress Monitoring</td>
<td>33.57 22.12</td>
<td>70.05 27.15</td>
</tr>
<tr>
<td>Coping Resources</td>
<td>48.73 12.50</td>
<td>65.99 15.85</td>
</tr>
</tbody>
</table>

df=819  
`t` critical = 1.96 at the .05 significance level

Table 3: Comparison of Control Group to Normative Group Using Pretest Percent Correct Scores
Stress Monitoring, and overall Coping Resources Effectiveness. The mean scores of the normative group were significantly higher than the control group and achieved statistical significance on those subscales. The normative group scores represented more confidence, better ability to monitor stress, and improved ability to cope with stress than the control group.

Table 4 illustrates that the subjects in the experimental group in this study had higher posttest scores on the overall coping effectiveness responses than did the control group.

<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>Experimental</td>
<td>12</td>
<td>55.74</td>
</tr>
<tr>
<td>Control</td>
<td>7</td>
<td>48.73</td>
</tr>
</tbody>
</table>

Note: The PPM correlation coefficient between pretest and posttest measurements was found to be $r = .69$.

Table 4: Means and Standard Deviations of Pre- and Posttest Scores of Coping Resources Effectiveness by Groups

In this study, as shown in Table 5, the experimental group had higher posttest scores than the control group on the measure of tension control. The subscale of tension control measures the ability to lower arousal through relaxation procedures and thought control. Persons with high scores have available to them one or more activities or
procedures which they believe to be effective in lowering stressful arousal, and they practice these procedures to reduce stress levels that interfere with their performance and/or cause emotional distress. These individuals feel they can control the level of tension they experience.

<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>Experimental</td>
<td>12</td>
<td>39.17</td>
</tr>
<tr>
<td>Control</td>
<td>7</td>
<td>43.57</td>
</tr>
</tbody>
</table>

Note: The PPM correlation coefficient between pretest and posttest measurements was found to be \( r = .42 \).

Table 5: Means and Standard Deviations of Pre- and Posttest Scores of Tension Control by Groups

Table 6 shows that, in this research, the experimental group also had higher posttest scores than the control group on the measure of stress monitoring. This scale measures one's awareness of personal stress and tension build-up, awareness of situations and events which are likely to prove stressful, and awareness of one's optimal stimulation range. Persons with superior stress monitoring skills are better able to take appropriate action to deal with stress before it escalates seriously and are thus able to regulate their stress levels to maintain a comfortable level of stress. Stress monitoring is more effective as a stress-reducing strategy if it is coupled with efforts to eliminate or
reduce the stressor and to reduce dysfunctional arousal
(Curlette et al., 1988).

<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n Mean</td>
<td>Std Dev</td>
</tr>
<tr>
<td>Experimental</td>
<td>12</td>
<td>55.00</td>
</tr>
<tr>
<td>Control</td>
<td>7</td>
<td>33.57</td>
</tr>
</tbody>
</table>

Note: The PPM correlation coefficient between pretest and posttest measurements was found to be $r = .69$.

Table 6: Means and Standard Deviations of Pre- and Posttest Scores of Stress Monitoring by Groups

The Self-Directedness scale measures the degree to which one respects his/her judgment and wisdom as a guide to behavior. High scorers are willing to think and behave somewhat independently of the opinions and wishes of others. The confidence scale assesses faith in one's ability to cope successfully with stressful life situations. High scorers tend to view themselves as being capable, competent, and well-adjusted.

As seen in Tables 7 and 8, respectively, assertiveness training and stress management training also produced increased posttest scores of the experimental group subjects on the measures of self-directedness and confidence.
<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>Experimental</td>
<td>12</td>
<td>56.67</td>
</tr>
<tr>
<td>Control</td>
<td>7</td>
<td>45.00</td>
</tr>
</tbody>
</table>

Note: The PPM correlation coefficient between pretest and posttest measurements was found to be $r = .71$.

Table 7: Means and Standard Deviations of Pre- and Posttest Scores of Self-Directedness by Groups

<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>Experimental</td>
<td>12</td>
<td>50.42</td>
</tr>
<tr>
<td>Control</td>
<td>7</td>
<td>35.00</td>
</tr>
</tbody>
</table>

Note: The PPM correlation coefficient between pretest and posttest measurements was found to be $r = .73$.

Table 8: Means and Standard Deviations of Pre- and Posttest Scores of Confidence by Groups
Tests of Hypotheses

The primary hypothesis, that there will be a statistically significant difference between experimental and control groups on the level of coping resources for stress, was tested using a one-way analysis of covariance. This test, which is typical in research with single-classification criterion, allows for control of pre-testing while comparing the two groups. Table 9 represents significant treatment effects that were observed $F(1, 16) = 5.12, p = .038$ for the measure of overall coping resources for stress using the corresponding pretreatment score as the covariate ($N=19$). The SAS system at The Ohio State University was used to determine the Type I, or hierarchical, method of data analysis.

On the subscale of tension control, significant treatment effects were also found $F(1, 16) = 5.95, p = .027$ (see Table 10). The posttest scores of the experimental group were significantly greater than those of the control group on the measures of tension control. The hypothesis that there will be a significant difference between experimental and control groups on the level of stress monitoring was found to be approaching statistical significance $F(1, 16) = 3.84, p = .068$. (See Table 11.)

For the hypotheses that compared posttest scores of the experimental and control groups on the measures of
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to Regression</td>
<td>1</td>
<td>2376.1244</td>
<td>19.23</td>
<td>.001</td>
</tr>
<tr>
<td>Adjusted group</td>
<td>1</td>
<td>632.4206</td>
<td>5.12</td>
<td>.038</td>
</tr>
<tr>
<td>Residual error</td>
<td>16</td>
<td>123.5682</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td>4985.6368</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The description of the results is based on the SAS Type 1 analysis.

Table 9: One-Way ANCOVA on Coping Resources Effectiveness posttest scores by type of group using Coping Resources Effectiveness pretest scores as covariate
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to Regression</td>
<td>1</td>
<td>2672.3514</td>
<td>4.72</td>
<td>.045</td>
</tr>
<tr>
<td>Adjusted group</td>
<td>1</td>
<td>3368.9010</td>
<td>5.95</td>
<td>.027</td>
</tr>
<tr>
<td>Residual error</td>
<td>16</td>
<td>565.8428</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>15094.7368</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The description of the results is based on the SAS Type 1 analysis.

Table 10: One-Way ANCOVA on Tension Control posttest scores by type of group using Tension Control pretest scores as covariate
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to Regression</td>
<td>1</td>
<td>10861.2928</td>
<td>18.20</td>
<td>.001</td>
</tr>
<tr>
<td>Adjusted group</td>
<td>1</td>
<td>2291.1295</td>
<td>3.84</td>
<td>.068</td>
</tr>
<tr>
<td>Residual error</td>
<td>16</td>
<td>596.8881</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>22702.6316</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The description of the results is based on the SAS Type 1 analysis.

Table 11: One-Way ANCOVA on Stress Monitoring posttest scores by type of group using Stress Monitoring pretest scores as covariate
confidence $F(1, 16) = 3.18$, $p = .094$ and self-directedness $F(1, 16) = 2.81$, $p = .113$, there were no treatment effects observed (see Tables 12 and 13, respectively).

The research results indicated that, for this population, the introduction of assertiveness training and stress management training increased posttest scores on the subscale of tension control and for the measure of coping resources for stress.

For the analysis of data, ANCOVA was used for two reasons: 1) ANCOVA effectively enhances design efficiency (increases statistical power), and 2) to make statistical adjustments for the effects of a concomitant variable (or variables) when comparing groups which have not been equated through the use of random assignment of subjects. Essentially, power is the probability of not making a Type II error, or the failure to reject the null hypothesis when it is false (Kennedy, 1985).

In conclusion, the findings confirmed the hypothesis that there is a significant statistical difference between second-semester nursing students who received assertiveness training and second-semester nursing students who did not receive training on the criterion variable of coping resources for stress. The research findings also confirmed a significant statistical difference between second-semester nursing students who received assertiveness training and
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to Regression</td>
<td>1</td>
<td>11040.3439</td>
<td>22.28</td>
<td>.002</td>
</tr>
<tr>
<td>Adjusted group</td>
<td>1</td>
<td>1575.2223</td>
<td>3.18</td>
<td>.094</td>
</tr>
<tr>
<td>Residual error</td>
<td>16</td>
<td>495.5732</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>20544.7368</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The description of the results is based on the SAS Type 1 analysis.

Table 12: One-Way ANCOVA on Confidence posttest scores by type of group using Confidence pretest scores as covariate
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to Regression</td>
<td>1</td>
<td>10394.7491</td>
<td>19.13</td>
<td>.001</td>
</tr>
<tr>
<td>Adjusted group</td>
<td>1</td>
<td>1528.1395</td>
<td>2.81</td>
<td>.113</td>
</tr>
<tr>
<td>Residual error</td>
<td>16</td>
<td>543.3063</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td><strong>12466.1949</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The description of the results is based on the SAS Type 1 analysis.

Table 13: One-Way ANCOVA on Self-Directedness posttest scores by type of group using Self-Directedness pretest scores as covariate
second-semester nursing students who did not receive training on the criterion variable of tension control. The research results on the subscale of stress-monitoring approached statistical significance. However, the findings on the subscales of self-directedness and confidence failed to confirm the hypothesis that there was significant statistical difference between second-semester nursing students who received assertiveness training and second-semester nursing students who did not receive this training. In this study, the results indicated that, for the subjects in the experimental group, the introduction of assertiveness training and stress management training increased their ability to control tension and improved their overall ability to cope with stress.
CHAPTER 5

SUMMARY AND DISCUSSION

This chapter contains a summary of the procedures, purpose of the study, and major findings of this study. A discussion including recommendations for future research follows.

Summary of Procedures

This study was conducted at the Mount Carmel College of Nursing in Columbus, Ohio, in the spring of 1997. The experimental sample of 12 baccalaureate degree first-year second-semester students volunteered for participation in the study. The Coping Resources Inventory For Stress (Curlette et al., 1988) was administered prior to the introduction of assertiveness training and stress management. Following one-hour training sessions held weekly for four weeks, the CRIS was re-administered for a posttest score. A control group of seven students, also second-semester freshman classmates, volunteered to participate in the study.

At the outset, permission to conduct this research was obtained from The Ohio State University Human Subjects Review Board and from the Mount Carmel Health Institutional Review Board.
Purpose of the Study

The purpose of this research was to investigate the relationship between assertiveness training and stress management training and the coping resources for stress in student nurses. Investigations of the inhibiting effects of psychological states on the functioning of the immune system, or psychoneuroimmunology, are discussed. The impact of stress and methods to increase coping skills are the focus of this study.

Research questions in the study were:

1. Is there a statistical difference between the experimental and control groups on the criterion variable of Coping Resources for Stress? The null hypothesis was rejected.

2. Is there a statistical difference between the experimental and control groups on the criterion variable of Self-Directedness? The null hypothesis was accepted.

3. Is there a statistical difference between the experimental and control groups on the criterion variable of Confidence? The null hypothesis was accepted.

4. Is there a statistical difference between the experimental and control groups on the criterion variable of Stress-Monitoring? Statistical analysis found the measure of stress-monitoring to
be approaching statistical significance, however, the null hypothesis was accepted.

5. Is there a statistical difference between the experimental and control groups on the criterion variable of Tension Control? The null hypothesis was rejected.

Summary of Major Findings

The major findings reported in this section include the descriptive analysis of data, comparison of means of this research sample to normative data, and testing of the hypotheses.

Descriptive Analysis

The descriptive analysis of the 19 subjects yielded the following profile. All were second-semester, first-year baccalaureate degree nursing students who were Caucasian females with no previous nursing experience. Ages ranged from 18-44 years, with a mean age of 23 years. Three students were non-traditional students, of an age greater than 25 years.

Comparison of Means with Normative Data

The means of the research sample which combines the experimental and control groups were compared with the means of the normative group, using pretest percent correct scores. Statistical significance was achieved on all variables except Self-Directedness. The means of the normative group were significantly higher on measures of
Confidence, Tension Control, Stress Monitoring, and Coping Resources Effectiveness than those of the research sample. Statistical significance was not achieved on the criterion variable of Self-Directedness with separate comparisons of the experimental group with the normative group and of the control group with the normative group. The research sample was as self-directed as the normative group as measured by the CRIS. (See Appendix F for subscale description.)

Statistical significance was not achieved when comparing the experimental group with the normative group on the criterion variable of stress monitoring. However, on the variables of confidence, tension control, and coping resources effectiveness, the means of the normative group were significantly higher than those of the experimental group. The 12 subjects in the experimental group had statistically significant lower mean scores than the normative group on the variables of confidence, tension control, and coping resources effectiveness.

When comparing the means of the control group with the normative group, statistical significance was achieved on the criterion variables of confidence, stress monitoring, and coping resources effectiveness. There was no statistical significance on the variables of tension control or self-directedness.
Tests of Hypotheses

In conclusion, the findings confirmed the hypothesis that there is a significant statistical difference between second-semester nursing students receiving assertiveness training and and stress management training and second-semester nursing students not receiving training on the criterion variable of coping resources for stress. Although this research is an extension of Mahaffey's 1992 study, her results failed to reach statistical significance on this criterion variable.

The research findings also confirmed a significant statistical difference between second-semester nursing students receiving assertiveness training and stress management training and second-semester nursing students not receiving training on the criterion variable of tension control. Again, these findings differ from Mahaffey's 1992 research in that her results failed to reach statistical significance on this criterion variable. Even though the mean pretest score of the experimental group was lower than the mean pretest score of the control group on the subscale of tension control, statistical significance was achieved on analysis of covariance of this subscale using the pretest score as the covariate.

On the criterion variable of stress monitoring, the research results were found to approach statistical significance. Mahaffey (1992) also found that students who
received assertiveness training reported higher levels of stress monitoring. (See Appendix F for a description of this subscale.)

The current research results failed to reach statistical significance on the criterion variables of confidence or self-directedness. Mahaffey's (1992) research also failed to reach statistical significance on these criterion variables. However, the subjects in Mahaffey's research who were older than age 25 scored higher on stress monitoring and confidence than students 25 years of age or younger.

Similarities and differences between this research and Mahaffey's (1992) research should be viewed cautiously. There were similarities in that the CRIS was administered to student nurses. However, there were differences in the number of subjects, the research intervention, and the time frame for conducting the research.

Discussion

Nursing literature supports the fact that education for nursing is stressful. While there is much documentation of the stress experienced by student nurses, there are few studies examining the effects of treatments that might increase their coping resources for stress. This study statistically examines assertiveness, as represented by self-directedness and confidence, as well as stress management, as represented by stress monitoring and tension
control. The Coping Resources Effectiveness score (CRE) is analyzed; this represents a 280-item inventory named CRIS or Coping Resources Inventory For Stress (Curlette et al., 1988).

The CRIS assesses the degree to which people perceive that they possess and use coping resources important in preventing and combating stressors. These resources are thought to reduce stress in different ways, but in general they are believed to prevent the triggering of the stress response or to lower the hyperarousal associated with it (Cannon, 1932).

Significant treatment effects were observed for the measure of overall coping with stress and for the measure of tension control. The measure of stress monitoring was found to be approaching statistical significance. There were no treatment effects for the measures of confidence or self-directedness.

A significant outcome of the research personally observed by the researcher was the positive result of social support that developed among the participants. The students were able to share feelings about the extreme level of stress they were experiencing. During the research, approximately one-third of the freshman class received a failing grade on a major examination. The professor, who had taught this class for a decade, had no explanation for such poor results of this particular class. Most of the
participants lived off-campus, worked at a full- or part-time job, and several had children to support. Students who declined to participate reported that they "were too stressed to take the time to learn about stress management."

In order to cope with the stress of living in today's fast-paced society, it is important to realize how closely the mind and body are interfaced. Therefore, it is essential to pay attention to what you are telling yourself with your inner "self-statements." As Maltz (1966) found, you must have the image of success in your head, because the body does not know the difference. If the self-statement is, "I can handle this," or "I will be able to manage," the body feels safe and secure. If the self-statements are more like "I can't stand this," or "I might as well give up," the body's response is similar to that in an emergency. According to Selye (1982), in states of "bad" stress or distress, a person is apt to feel headaches, cervical tension, increased heart rate, anxiety, depression, gastrointestinal pain, and fatigue. The body indicates the need to examine the cognitions being processed. The effects of stress may be seen as fever blisters, rashes, hot flushes about the face and neck, or fasciculations such as twitching muscles around the eyes.

The ability to recognize the early signs of tension build-up in the body is essential. It is easier to calm oneself when mildly irritated rather than after the anger
has escalated. The individual must learn to monitor the stress in life in order to maintain a sense of balance. Because stress is the gap between our perceived demands and our perceived resources, it is essential to recognize when our stressors seem to be building to an uncomfortable level (Curlette, 1988). A healthy approach is to always remember that it is not what happens to us in this life but what we tell ourselves about it.

Emotional safety is at least as important as physical safety. The basic tenets of assertiveness training dictate that one must ask for what he or she wants, refuse what is not wanted, and ask for a change in behavior from others, in order to develop a sense of confidence. Living a self-directed life, rather than being governed by the demands or whims of others, results in healthier relationships and happier, more productive lives.

Counselors must help people realize the importance of recognizing and controlling the tension in their bodies and managing the stress in their lives. Being able to change from either a passive or aggressive approach to one of assertiveness helps produce the sense of emotional safety and security so necessary for healthy living.

The practice component of stress management training is very important. Even though these concepts may seem new or strange, we must realize that humans are flexible and capable of adapting to new ways of thinking and behaving.
As the way of thinking is changed, individuals learn that the feelings which follow also change for the better.

Mahaffey (1992) also used the CRIS to investigate the relationship between assertiveness training and coping resources for stress. She found that associate degree nurses who received assertiveness training reported higher levels of stress monitoring. Her results were based on a study of 100 subjects who received the training prior to the beginning of the first semester of the freshman year of nursing education at Hinds Community College in Mississippi.

The research at Mount Carmel College of Nursing in Columbus, Ohio, was conducted during the second semester. Enthusiasm among the student body regarding the research had been much higher in January 1997 than it was two months later, in March. Twice as many students signed up for participation in January, but logistics caused a problem that resulted in delay. There was considerable difficulty in arranging times for students to meet when a classroom or other suitable space was available for the testing and training. The students were already juggling busy schedules with school, work, and families.

Mahaffey (1992) also found that students over the age of 25 reported higher levels of confidence and stress monitoring, and her research indicated as well that non-whites reported lower levels of financial freedom and social support than white subjects.
In future, research conducted prior to the beginning of the first semester of nursing education is recommended. It is essential to be able to recognize and monitor stress and to control tension in the body in order to cope with the stress of an educational program and, ideally, students should be helped to augment their coping skills before or during the first semester.

I would also recommend investigating the remaining subscales of the CRIS which represent financial freedom, social support, physical health, problem-solving and physical fitness, among others. Ideally, if 80 to 100 subjects had been available for study, the Solomon Four-Group Design would have been utilized. According to Campbell and Stanley (1963), the Solomon Four-Group Design allows for determining both the main effects of testing and the interaction of the testing and the treatment. In this way, not only is generalizability increased but, in addition, the effect of X is replicated in four different fashions: \(0_2 > 0_1, 0_2 > 0_4, 0_5 > 0_6\) and \(0_5 > 0_3\). The actual instabilities of experimentation are such that if these comparisons are in agreement, the strength of the inference is greatly increased (Campbell and Stanley).

The design for the Nonequivalent Control Group is:

\[
\begin{array}{ccc}
0 & X & 0 \\
- & - & - \\
0 & 0 & 0 \\
\end{array}
\]

75
while the Solomon Four-Group Design is:

\[
\begin{array}{cccc}
& R_{01} & X & 0_2 \\
R_{03} & 0_4 \\
R & X & 0_5 \\
& 0_6 \\
\end{array}
\]

The nonequivalent control group design, one of the most widespread experimental designs in educational research, involves an experimental group and a control group both given a pretest and a posttest, but in which the control group and the experimental group do not have pre-experimental sampling equivalence. Rather, the groups constitute naturally assembled collectives such as classrooms, as similar as availability permits, but yet not so similar that once can dispense with the pretest. The more similar the experimental and the control groups are in their recruitment, and the more this similarity is confirmed by the scores on the pretest, the more effective this control becomes. Assuming that these desiderata are approximated for purposes of internal validity, we can regard the design as controlling the main effects of history, maturation, testing, and instrumentation, in that the difference for the experimental group between pretest and posttest (if greater than that for the control group) cannot be explained by main effects of these variables such as would be found affecting both the experimental and control group (Campbell and Stanley, 1963).
Recommendations

Based upon the literature review, the methodology, and the findings of this study, the researcher recommends that:

1. This study be conducted prior to the beginning of the first semester of study as an intensive eight-hour workshop. Support group sessions should be continued throughout the entire program of study. Methods to monitor and control stress should be available to the student before the course of study has begun. It would also be easier to assemble the students prior to the beginning of the freshman year.

2. On admission to nursing school, individualized assessment of stressors on students should be determined. The CRIS could be administered which would indicate if stressors were related to coping resources for stress, finances, social support, health, etc.

3. Once stressors have been identified, workshops should be offered to the student. Workshop topics should include not only assertiveness and stress management training, but also finances, wellness, etc.

4. Assertiveness training and stress management training should be incorporated into the curriculum and be implemented at every level since it is well established in the literature that nursing education is stressful.
5. A follow-up study of these students should be conducted to compare scores on coping resources for stress in order to determine if the benefits of the intervention are maintained over time. According to Bandura (1969) the practice component is essential if assertiveness skills are to be maintained.

6. The students involved in this study should be tracked to completion of the program. Comparison of attrition rates could then be made for students receiving the intervention versus those not receiving assertiveness and stress management training. If the introduction of assertiveness training results in the reduction of attrition rates, nursing education programs would benefit by including the assertiveness training throughout their program to reduce the drop-out rate of nursing students.

7. Continuing education on the subjects of identifying stress and promoting use of coping resources should also be provided for all faculty members.

8. Implications for counselors are to recognize the importance of being able to recognize stress, to control tension, and to effectively cope with stress, not only for teaching clients, but also for personal use.

9. Meichenbaum's stress-inoculation training program be utilized.


APPENDICES
APPENDIX A

INVITATIONS
Sample of Mailer

(Inserted with students' first semester grades)

My name is Peggy Cook and I am a 1965 graduate of the Mt. Carmel School of Nursing. I have practiced nursing these past 30 years both as a private scrub nurse for an orthopedic surgeon and as a casual nurse on Mt. Carmel's Psychiatric Unit.

I am currently involved in a research project investigating the benefits of assertiveness training and coping resources for reducing stress. The study is performed as a partial fulfillment of the requirements for my Ph.D. degree in Counselor Education at The Ohio State University.

Your participation in this project will provide useful information as well as personal benefits to you. You will be given four one-hour weekly sessions of assertiveness and stress management training which involve individual and group participation. A questionnaire will be completed at the last session.

Participation in this study is strictly voluntary. You may withdraw from the study at any time without penalty. Participation is not associated with your class grade. All data from this project are confidential and will be used for research purposes only. Data from questionnaires and instruments are anonymous. Names of participants will not be connected to information and scores.

I hope you will join me in what I know can be a fun and rewarding experience for both of us. I would greatly appreciate your participation in this project. Thank you for your assistance.
Sample Letter for Nursing Student's Mailbox

Congratulations! You have successfully completed your first semester at the Mount Carmel College of Nursing. I am offering you the opportunity to increase your coping skills for the reduction of stress associated with being a nursing student.

Mount Carmel College of Nursing is sponsoring my dissertation research for a doctoral degree from The Ohio State University. I need your help to complete my research. The freshman class was chosen for four one-hour sessions of assertiveness and stress management training to be offered on a one session per week basis. You will learn skills to assist you not only with your education and nursing practice but also with your everyday life.

The program is entirely voluntary and you will be allowed to withdraw from the study at any time without penalty. I will make every effort for this to be both fun and a rewarding experience for you. Thank you for your support.

With grateful appreciation

Peggy Tootle Cook
Class of 1965
To: Freshman Student Nurses  Feb. 20 1997

From: Peggy Cook, RN, LPCC

Topic: Update on assertiveness training

I talked to some of you in January regarding the research I will be conducting at Mount Carmel College of Nursing. I have added Stress Management Techniques to the training so that I will have even more to offer you.

Beginning on Monday March 10, the training sessions will be:

1. Monday evenings at 7 pm in the Intro. Nursing Classroom
2. Wednesday afternoons at 2 pm in Classroom A
3. Thursday mornings at 11 am in Classroom C

The training will be for one hour weekly for eight weeks. The first and last sessions will be utilized by administration of the Coping Resources for Stress inventory.

Please sign up at the front desk for the time which works best for you.

If you choose not to have the training, would you please sign up to be in the control group?

Students in the control group will not receive the assertiveness training but will be required to take the Coping Resources for Stress inventory which will be administered at the times listed above the week of March 10 and again the week of May 5. It takes approximately 45 minutes to complete the true/false inventory.

The research findings will help Mount Carmel College of Nursing in their search for how to help you cope with your stress. Thank you very much for your participation.

If you have any questions or concerns, please contact me at 457-0360.
APPENDIX B

BEHAVIORAL AND SOCIAL SCIENCES

HUMAN SUBJECT REVIEW COMMITTEE

APPROVAL FORMS
ACTION OF THE REVIEW IRB

With regard to the employment of human subjects in the proposed research protocol:

96B0266 COPING RESOURCES FOR STRESS AND ASSERTIVENESS TRAINING IN NURSING STUDENTS, Linda Perosa, Peggy Cook, Wellness and Human Services

THE BEHAVIORAL AND SOCIAL SCIENCES REVIEW IRB HAS TAKEN THE FOLLOWING ACTION:

____ APPROVED

X  APPROVED WITH CONDITIONS*

____ DISAPPROVED

____ WAIVER OF WRITTEN CONSENT GRANTED

* Conditions stated by the IRB have been met by the Investigator and, therefore, the protocol is APPROVED.

It is the responsibility of the principal investigator to retain a copy of each signed consent form for at least three (3) years beyond the termination of the subject's participation in the proposed activity. Should the principal investigator leave the University, signed consent forms are to be transferred to the Human Subjects Review IRB for the required retention period. This application has been approved for the period of one year. You are reminded that you must promptly report any problems to the Review IRB, and that no procedural changes may be made without prior review and approval. You are also reminded that the identity of the research participants must be kept confidential.

Date:  September 6, 1996

Signed:  Patricia M. Schurer

(Chairperson)
October 21, 1996

Ms. Peggy Cook, R.N., M.A., LPCC
3490 West Henderson Road
Columbus, OH 43220

Re: IRB No.96008-008, Protocol Entitled: "Assertiveness Training and Coping Resources for Stress in Nursing Students".

Dear Ms. Cook:

The Mount Carmel Health Institutional Review Board (IRB) reviewed the above referenced protocol and informed consent form on October 1, 1996 and, I am pleased to inform you that both the protocol and the informed consent form were approved by the Committee.

The IRB Committee has requested a review and followup summary of this study in 12 months. In addition, we would want to receive a report from the College of Nursing Administration, indicating that they have reviewed the summary report. A questionnaire form will be mailed to you approximately one month prior to the review date. This questionnaire must be completed and returned to the IRB. Failure to do so could result in this project being suspended or terminated.

As Principal Investigator, you are responsible for:

1. Promptly reporting to the IRB any proposed changes in the research protocol;
2. Insuring that changes in approved research are not initiated without IRB review and approval except when necessary to eliminate apparent immediate hazards to the subjects;
3. Promptly reporting to the IRB any unanticipated problems involving risk to subjects;
4. Promptly reporting to the IRB any adverse events occurring during the conduct of the research study.

If any of these responsibilities are not met, then the protocol will be considered suspended or terminated until the IRB receives assurance that these requirements will be met. Any questions or comments about this letter may be directed to me at 234-5293, or Jeanne Federer, IRB Coordinator at 234-5001. Thank you.

Sincerely,

Joseph F. Meara, M.D.
Chairperson, Mount Carmel Health Institutional Review Board
JFM/jef
APPENDIX C

CONSENT FORM FOR PARTICIPATION
Informed Consent

This study considers the relationship between assertiveness training and coping resources for stress. It is performed as a partial fulfillment of the requirements for my Ph.D. in Counselor Education at The Ohio State University.

There are no foreseeable risks with the research. If any discomfort should arise regarding material addressed in the study, you may call me, Peggy Cook at 457-0360, to ask questions or discuss these feelings. A more complete statement of the nature and purpose of the research will be available when the data collection is completed.

As a student volunteer:

I agree to participate in this research project and I understand that:

1. I will attend hourly assertiveness training sessions for four consecutive weeks.

2. I will complete the Coping Resources Inventory For Stress at the last session.

3. My participation is entirely voluntary and I may withdraw from the study at any time without penalty.

4. All my data are confidential.

5. All data are for research purposes only and will not affect my course grade.

6. If I have questions about the research, or need to talk to the researcher after my participation in the study, I can contact

Peggy Cook
3490 West Henderson Road
Columbus, Ohio 43220
(614)  457-0360

Signed ___________________________  Date ____________
APPENDIX D

ASSERTIVENESS TRAINING
TREATMENT SESSION FORMATS

Session 1 - Introduction and Refusing Requests

1. Introduction: Introduction to the group and group members. Purpose of the group and how the learning experiences will be structured.

2. Cognitive restructuring:
   a. Definition of assertive behavior and how it differs from non-assertive and aggressive behavior. Point out both verbal and non-verbal components. Distribute handouts (Assertive Behavior: Ideas to Keep in Mind; Chart Differentiating between Assertive, Non-Assertive and Aggressive Behaviors).

   b. Discussion of the advantages to behaving assertively and the disadvantages of non-assertion. Encourage a sharing of experiences.

   c. Discussion and exploration of "blocks" to behaving assertively. How individuals "scare" themselves into non-assertion by catastrophizing consequences. The influence of female role expectations, lack of know how, etc.

   d. Emphasize that non-assertive behavior has been learned; assertive behavior can also be learned by watching others behave assertively and imitating what has been observed.

3. Live Modeling of "Refusing Requests":

   a. Distribute handout (Refusing Requests: Ideas to Keep in Mind).

   b. Discuss the principles outlined in the handout. Encourage discussion and questions.

   c. Ask the group to be mindful of these principles as they observe the leader enacting the role of the assertive model in each of the structured script situations.

   d. The leader assumes the role of the assertive model and plays out her part using a volunteer to play opposite her.
TREATMENT SESSION FORMATS

e. Ask for two additional volunteers to repeat the script situation while the leader models appropriate "coaching" behavior.

4. Behavior Rehearsal (script):
   a. The group members divide into trios and practice refusing requests from the structured script situations. During each sequence the members reverse roles so that each person plays the part of assertive model, the person opposite the model, and the coach.
   
   b. Emphasize that the model must continue to practice her part until she feels comfortable in the role and the coach is satisfied with her performance.
   
   c. The leader rotates among the trios and reinforces appropriate modeling as well as coaching behavior.
   
   d. Call for discussion following each sequence practiced.

5. Behavior Rehearsal (impromptu):
   a. Two situations calling for request refusing behavior are presented to the group.
   
   b. Discussion of possible ways of responding to the situation.
   
   c. Volunteers enact the alternative responses; the remaining group members serve as coaches.
   
   d. Leader reinforces cognitive input as well as appropriate assertive modeling.

6. Behavior Rehearsal (specific situations):
   a. Call for volunteers who have specific refusing situations that are particularly difficult for them
TREATMENT SESSION FORMATS

b. The group leader gathers data regarding each situation, and using behavior rehearsal and role reversal, assists her toward her own solution.

c. Group members are encouraged to give suggestions and to act as coaches.

7. Behavior Assignment:

a. Point out the importance of immediately implementing what has been learned to situations in real life.

b. Assign group members the task of "saying no" each time they wish to refuse a request during the following week.

c. Instruct them to record their experiences on the Between Sessions Practice Report Form.
MAKING REQUESTS SESSION

1. Discussion of Between Session Practice Reports:
   a. Call for a sharing of experiences in refusing requests during the week.
   b. Verbally reward risk taking behavior and behavior which approximates appropriate request refusing principles.
   c. Discuss specific problems arising from the practice, but emphasize positive experiences.

2. Live Modeling of "Making Simple Requests":
   a. The same format as Session I with a change in topical content.
   b. Omit leader modeling of appropriate "coaching" behavior.

3. Behavior Rehearsal (script, impromptu, and specific) of "Making Simple Requests": Same format as Session I.

4. Behavior Assignment: Same format as Session I.
REVIEW AND EVALUATION SESSION

1. Brief Review of the Content of the Previous Sessions:
   a. Call for questions and discussion.

2. Behavior Rehearsal (specific situations):
   a. Call for volunteers who are having difficulty in any of the three areas of assertive responding.
   b. As in previous sessions, the leader and group members act as coaches while the volunteer arrives at a solution of the specific problem.

3. Evaluation of the Training Sessions:
   a. Call for a verbal discussion of the training sessions. Ask for specific suggestions for future sessions. What were most and least effective learning experiences?
   b. Have group members fill out written evaluation form.
ASSERTIVE BEHAVIOR: IDEAS TO KEEP IN MIND

1. Assertive behavior is often confused with aggressive behavior; however, assertion does not involve hurting the other person physically or emotionally.

2. Assertive behavior aims at equalizing the balance of power, not in "winning the battle" by putting down the other person or rendering him/her helpless.

3. Assertive behavior involves expressing your legitimate rights as an individual. You have a right to express your own wants, needs, feelings, and ideas.

4. Remember: other individuals have a right to respond to your assertiveness with their own wants, needs, feelings, and ideas.

5. An assertive encounter with another individual may involve negotiating an agreeable compromise.

6. By behaving assertively, you open the way for honest relationships with others.

7. Assertive behavior not only is concerned with what you say, but how you say it.

8. Assertive words accompanied by appropriate assertive "body language" makes your message more clear and impactful.

9. Assertive body language includes the following:
   a. Maintaining direct eye contact
   b. Maintaining an erect posture
   c. Speaking clearly and audibly
   d. Making sure there is not a whiney quality to your voice
   e. Using facial expression and gestures to add emphasis to your words.

10. Assertive behavior is a skill that can be learned and maintained by frequent practice.
REFUSING REQUESTS: IDEAS TO KEEP IN MIND

1. You have a right to say no.

2. You deny your own importance when you say yes and you really mean no.

3. Saying no does not imply that you reject another person -- you are simply refusing a request.

4. When saying no, it is important to be direct, concise, and to the point.

5. If you really mean to say no, do not be swayed by pleading, begging, cajoling, compliments, or other forms of manipulation.

6. You may offer reasons for your refusal, but do not get carried away with numerous "excuses."

7. Do not become overly apologetic; this can be offensive.

8. Demonstrate assertive body language:
   a. Maintain direct eye contact
   b. Maintain an erect body posture
   c. Speaking clearly and audibly
   d. Do not whine or have an apologetic tone to your voice
   e. Make use of facial expression and gestures for emphasis.

9. Saying no is a skill that can be learned.

10. Saying no and not feeling guilty about it can become a habit -- a habit that can be very growth enhancing.
MAKING SIMPLE REQUESTS: IDEAS TO KEEP IN MIND

1. You have a **right** to make your wants known to others.

2. You deny your own importance when you do not ask for what you want.

3. The **best** way to get exactly what you want is to ask for it directly.

4. Indirect ways of asking for what you want may not be understood, e.g. complaining of a sore back rather than asking for a back rub.

5. Demonstrate assertive body language:
   
a. Maintain direct eye contact
b. Maintain an erect body posture
c. Speak clearly and audibly
d. Do not whine or have a pleading voice quality
e. Make use of gestures and facial expression for emphasis.

9. Asking for what you want is a skill that can be learned.

10. Directly asking for what you want can become a habit with many pleasant rewards.
REQUESTING A CHANGE IN BEHAVIOR: IDEAS TO KEEP IN MIND

1. You have a **right** to let others know that their behavior bothers you. You also have a right to ask them to modify their behavior.

2. When you do not exercise this right you deny the importance of yourself as well as the relationship.

3. Follow this important four-step procedure:
   a. **Describe** the behavior you see and/or hear in the other person. It is important that you use descriptive rather than labeling words, e.g., you have been leaving your dirty laundry all over the room...rather than You are an inconsiderate slob!
   b. **Express** the feelings you experience as a result of the other person's behavior, e.g., I feel angry and resentful when you leave your dirty laundry all over the room.
   c. **Ask** for a specific change in behavior, e.g., I would like you to keep your dirty laundry in the closet. Are you willing to do this?
   d. It may be necessary to spell out specific and reasonable consequences should the person not comply with your request, e.g., if you continue to scatter your dirty laundry all over the room, I will simply sweep it all underneath your bed.

4. **Demonstrate assertive body language:**
   a. Maintain direct eye contact
   b. Maintain an erect body posture
   c. Speak clearly and audibly
   d. Do not whine
   e. Make use of gestures and facial expression for emphasis.

5. **Giving other people direct messages about how their behavior effects you is a skill that can be learned.**
STRUCTURED SCRIPT SITUATIONS

Refusing Requests

1. Doctor: If I see Mrs. Brown today, I'll be late for my tee time. Would you tell her I got called out on an emergency?
   Nurse: No. I will tell her that you can see her tomorrow, but I will not say you had an emergency.

2. Doctor: "My back is killing me. Mr. Jones was just discharged. He should have a Demorol pill left. Would you get it for me?
   Nurse: You know the controlled substances have to go back to the pharmacy. We have Extra-Strength Tylenol for staff use if you want that instead.

3. Doctor: I've had a rough week. It's Friday night and my wife is out of town. Let's go get something to eat and have a few beers.
   Nurse: I do not date married men. Please do not ask me again.
Making Requests

1. **Nurse:** I would like to take a class next quarter at 3:00 o'clock on Wednesdays. Could we arrange the schedule to allow for this?

   **Doctor:** I would rather you take an evening course so as not to disrupt the schedule.

   **Nurse:** I am sorry, but that is the only time this course is offered.

2. **Nurse:** I would like to discuss an increase in my salary. Could we arrange a time to talk?

   **Doctor:** Forget it. I can't afford it.

   **Nurse:** It would take about ten minutes for me to present the reasons why I deserve a raise. Could we make an appointment?

   **Doctor:** Ok. How's Friday at 4:00 p.m.?

   **Nurse:** That's fine. Thank you.
Asking For a Change in Behavior

1. Doctor: Why are you calling me at home?

   Nurse: Could you give us clear instructions about whether we are to use your home phone number or your pager?

2. Doctor: Sorry, I'm late.

   Nurse: Could you please call us in the future if you are going to be more than fifteen minutes late?

3. Doctor: I'll send my girl in to schedule you for the test.

   Nurse: I'm not your "girl". Would you please refer to me by my name or at least as the nurse?
APPENDIX E

STRESS MANAGEMENT TRAINING
DEEP BREATHING

Imagine that your lungs are deflated balloons. Picture how they would be inflating as you breathe in through your mouth. Say to yourself "Calm in," and take a deep breath. Hold your breath for a few seconds. Picture how your lungs (balloons) would look as they are deflating. Breathe out through your mouth as you say to yourself "Stress out."

Repeat this process several times. Concentrate on how your lungs (as balloons) look and concentrate on the words "Calm in," and "Stress out." Picture yourself in a relaxed state until you begin to feel more relaxed.

As you practice this exercise and it becomes easy for you, it will become automatic in times of stress. You can develop an image in your mind of yourself in a perfectly relaxed state that will become a CUE to control stress throughout your life. When you learn to recognize signs of tension in your body, you can use this exercise to keep yourself calm before anxiety or anger escalates.
CERVICAL SPINE EXERCISES

1) Sit straight with shoulders relaxed.
2) Concentrate on locating any tight muscles or sore spots at your neck or shoulders.
3) Take two deep breaths using deep breathing techniques.
4) Look slowly over your right shoulder as far as you can without causing pain. (DO NOT TURN YOUR SHOULDERS -- JUST TURN YOUR HEAD.) Hold the position and count to five.
5) Turn your head so you are looking straight ahead.
6) Slowly turn your head so you are looking over your left shoulder as far as you can without causing pain and count to five.
7) Repeat the process -- to the right, then to the left.
8) Take two more deep breaths.
9) Remember to sit straight, with shoulders relaxed.
10) Slowly drop your right ear toward your right shoulder and hold for a count of five.
11) Raise your head slowly, lower your left ear toward your left shoulder and hold for a count of five.
12) Do not raise your shoulders toward your ears.
13) Repeat the motions and pay attention to any tightness across your shoulders or any tender areas.
14) Take two more deep breaths.
15) Using one hand or both hands, massage areas that seem uncomfortable.
16) Move your head in a circular motion, letting the weight of your head gently pull against tight muscle groups. Pay attention to any sore areas at your shoulder blades or entire shoulder girdle. Make a circle in one direction (clockwise), then reverse the circle (counter-clockwise).
17) Take two deep breaths.
18) Make five circular motions forward with both shoulders, then reverse the circles to produce a backward motion.
19) Reach your hands across your chest and give yourself a big hug.
1) It's not what happens to us in life, but what we tell ourselves about it.

2) Frustration equals the GAP between our expectations and our achievements.

3) Seek first to understand, then to be understood.

4) It is not about being right or wrong, but recognizing the difference in opinions that matters.

5) The body cannot tell the difference between what is real and what is imagined.

6) Act as if it were impossible to fail.
POSITIVE IMAGERY

To succeed -- "Picture" yourself succeeding. Your body will respond accordingly (Maltz, 1966). You are prepared for a test and "see" yourself succeeding on the examination.

To reduce anxiety -- Choose your favorite vacation spot. Use all five senses.

The beach:
1) See the light shining on the water.
2) Taste the salt-water spray on your lips.
3) Touch the sand between your feet and toes.
4) Smell the sun tan lotion.
5) Hear the waves crashing.

I picture myself on a rock in waist-high water in Nassau, Bahamas. The sun is shining and the water is turquoise blue. The waves try to push me off my rock, and sometimes they succeed. Try to use all five senses and really concentrate on picturing yourself in your favorite scene. After a few minutes you will realize you are not troubled by the thoughts which were causing anxiety before you began the exercise.

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APPENDIX F

COPING RESOURCES INVENTORY FOR STRESS SUBSCALES
COPING SCALE DESCRIPTIONS

of the Coping Resources Inventory For Stress

Primary Scale:

Coping Resources Effectiveness (CRE). The CRE represents the overall ability to cope with stress.

Subscales:

Self-Directedness - This scale measures the degree to which one respects his/her judgement and wisdom as a guide to behavior. High scorers are willing to think and behave somewhat independently of the opinions and wishes of others. Self directedness implies self-support rather than environmental support and appropriate assertiveness in interpersonal relationships. Assertiveness is the honest, straight-forward expression of one's opinions, feelings, and wishes as they relate to others. It is the act of speaking up on one's own behalf, of refusing or making requests, of seeking redress for injustices, and the willingness to give constructive criticism and express opposing opinions. Assertiveness on this scale is related to the Self-Disclosure scale inasmuch as both involve self-expression; however, assertiveness as herein defined is more likely to involve conflict, or potential conflict with others.

Confidence - This scale assesses faith in one's ability to cope successfully with stressful life situations. High scorers tend to view themselves as being capable, competent, and well-adjusted. They usually feel control over their lives and mastery over their environments. They are able to put their problems in proper perspective so they do not feel overwhelmed, and they are able to control their emotions in the interest of solving those problems. Confident persons believe in their coping ability and usually expect to succeed. This scale measures self-respect more than self-acceptance. It correlates more highly with the overall CRIS score (CRE) than does any other CRIS scale. It's median correlation across other CRIS scales is higher than the median correlation for any other scale.
Stress Monitoring - This scale measures one's awareness of personal stress and tension build-up, awareness of situations and events which are likely to prove stressful, and awareness of one's optimal stimulation range. Persons with superior stress monitoring skills are better able to take appropriate action to deal with stress before it escalates seriously and are able to regulate their stress levels to maintain a comfortable level of stress. Stress monitoring is more effective as a stress-reducing strategy if it is coupled with efforts to eliminate or reduce the stressor and to reduce dysfunctional arousal.

Tension Control - This scale measures the ability to lower arousal through relaxation procedures and thought control. Persons with high scores have available to them one or more activities or procedures which they believe to be effective in lowering stressful arousal, and they practice these procedures to reduce stress levels that interfere with their performance and/or cause emotional distress. They feel they can control the level of tension they experience.